

STN Karlsruhe

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 ACCESSION NUMBER: 2000-648385 [63] WPIDS
 DOC. NO. CPI: C2000-196222
 TITLE: Microorganism with deregulated cysteine metabolism,
 useful for high-level production of cysteine and its
 derivatives, has increased activity of the CysB
 transcription regulator.
 DERWENT CLASS: B05 D16 E16
 INVENTOR(S): MAIER, T; WINTERHALTER, C
 PATENT ASSIGNEE(S): (CONE) CONSORTIUM ELEKTROCHEM IND GMBH
 COUNTRY COUNT: 34
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG | MAIN | IPC |
|--|------|----------|-----------|----|----|------------|-----|
| DE 19949579 | C1 | 20001116 | (200063)* | | 11 | C12N001-00 | <-- |
| WO 2001027307 | A1 | 20010419 | (200124) | GE | | C12P013-12 | |
| RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE | | | | | | | |
| W: CA CN HU JP KR PL RU SK US | | | | | | | |
| EP 1220940 | A1 | 20020710 | (200253) | GE | | C12P013-12 | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT | | | | | | | |
| RO SE SI | | | | | | | |
| SK 2002000497 | A3 | 20020910 | (200274) | | | C12P013-12 | |
| KR 2002059620 | A | 20020713 | (200306) | | | C12N001-20 | |
| EP 1220940 | B1 | 20030129 | (200309) | GE | | C12P013-12 | |
| R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT | | | | | | | |
| RO SE SI | | | | | | | |
| CN 1379823 | A | 20021113 | (200317) | | | C12P013-12 | |
| DE 50001193 | G | 20030306 | (200319) | | | C12P013-12 | |
| JP 2003511086 | W | 20030325 | (200330) | | 32 | C12N015-09 | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|------|------------------|----------|
| DE 19949579 | C1 | DE 1999-19949579 | 19991014 |
| WO 2001027307 | A1 | WO 2000-EP9720 | 20001005 |
| EP 1220940 | A1 | EP 2000-969413 | 20001005 |
| | | WO 2000-EP9720 | 20001005 |
| SK 2002000497 | A3 | WO 2000-EP9720 | 20001005 |
| | | SK 2002-497 | 20001005 |
| KR 2002059620 | A | KR 2002-704742 | 20020412 |
| EP 1220940 | B1 | EP 2000-969413 | 20001005 |
| | | WO 2000-EP9720 | 20001005 |
| CN 1379823 | A | CN 2000-814272 | 20001005 |
| DE 50001193 | G | DE 2000-501193 | 20001005 |
| | | EP 2000-969413 | 20001005 |
| | | WO 2000-EP9720 | 20001005 |
| JP 2003511086 | W | WO 2000-EP9720 | 20001005 |
| | | JP 2001-530510 | 20001005 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|------|-----------------------|
| EP 1220940 | A1 | Based on WO 200127307 |
| SK 2002000497 | A3 | Based on WO 200127307 |
| EP 1220940 | B1 | Based on WO 200127307 |
| DE 50001193 | G | Based on EP 1220940 |
| | | Based on WO 200127307 |

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JP 2003511086 W Based on

WO 200127307

PRIORITY APPLN. INFO: DE 1999-19949579 19991014

INT. PATENT CLASSIF.:

MAIN: C12N001-00; C12N001-20; C12N015-09; C12P013-12
SECONDARY: C12N001-21; C12N009-10; C12N015-54; C12N015-63;
C12N015-67; C12N015-70
INDEX: C12N001-21; C12P013-12; C12R001:19; C12R001:19

BASIC ABSTRACT:

DE 19949579 C UPAB: 20001205

NOVELTY - Microorganism (A) suitable for fermentative production of L-Cys and its derivatives has a deregulated Cys metabolism that is not related to altered CysB activity and has increased CysB activity which provides a regulatory pattern typical of that for wild-type CysB.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) method for producing (A);
(2) method for producing L-Cys and its derivatives by fermentation of (A);
(3) plasmid containing the elements required for deregulation of Cys metabolism that does not change CysB activity, and a cysB gene under control of a promoter; and

(4) method for overexpression of metabolites (II) by overexpressing a regulatory gene of the LysR-Trp transcription regulator family.

USE - (A) are used for fermentative production of L-Cys (useful as food additive, particularly in baked goods; as cosmetic ingredient; and as starting material for pharmaceuticals) e.g. N-acetyl-Cys or S-carboxymethyl-Cys) or its derivatives (e.g. cystine, methionine, glutathione, biotin, thiazolidines, thiamine, lipoic acid or coenzyme A). More generally any transcription factor of the LysR-Trp family (to which CysB belongs) can be used to induce overexpression of metabolites.

ADVANTAGE - (A) secretes L-Cys and its derivatives in higher yield than cells without increased CysB activity.
Dwg.0/2

TECHNOLGY FOCUS:

DE 19949579 C1 UPTX: 20001205

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Microorganisms: Increased cysB activity is provided by increased expression of homologous or heterologous cysB genes. (A) is particularly an Escherichia coli strain in which the wild-type cysB gene is overexpressed.

Preparation: A microorganism with deregulated Cys metabolism in modified either to increase the copy number or the expression (e.g. by promoter exchange) of the wild-type cysB gene or of a cysB gene that has the wild-type regulation pattern. Especially the microorganism is transformed with the plasmid of (3), particularly a high copy number plasmid containing cysB. Alternatively, extra copies of cysB are integrated into the chromosome by homologous recombination.

FILE SEGMENT: CPI

FIELD AVAILABILITY: AB; DCN

MANUAL CODES: CPI: B04-E08; B04-F10A3E; B10-B02D; B11-A01; D05-C01;
D05-H12D5; D05-H12E; D05-H14A1; D05-H17A6; D08-B;
E10-B02D1; E11-M